

In the performance of this operation, Dr. Duncan makes the following suggestions: First, that when practicable the vessels of the broad ligament should be ligatured as recommended by Schröder, instead of being permanently clamped with forceps as proposed by Sir Spencer Wells. Second, that closure of the peritoneal cavity with sutures is an unnecessary proceeding, from the fact that the bladder, even when empty, falls down on the posterior vaginal wall and contracts adhesions with it, and is sometimes injurious from the risk of wounding the ureters in the attempt. Third, that the insertion of a drainage tube and plugging the upper part of the vagina are injurious, from the fact that they prevent the shutting off of the peritoneal cavity by natural processes. On the other hand, he advocates that the patient be well propped up in bed so as to keep the wound closed by the pressure exerted by the intestines on the bladder and also to facilitate the escape of any exuded fluid into the vagina.

After pointing out the various conditions for which this operation has been performed, he concludes that in cases of malignant disease alone is this operation ever justifiable. And, moreover, it is only in some cases of cancer of the body of the organ that total extirpation is called for. In all cases of cancer affecting the portio vaginalis, and *à fortiori* when there is the least implication of the vaginal walls, total ablation of the uterus, from its immense immediate risks, is an unjustifiable proceeding, when quite as good ultimate results may be obtained from an operation—i. e., supravaginal amputation—the immediate risks to life from which are four times less.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

UNDER THE CHARGE OF
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THREE CASES OF INJURY OF THE HEART.

DR. SCHULTE, of Hörde, reports three such cases (*Viertelj. f. gerichtl. Med.*, 1886, N. F., Bd. xliv. S. 308-311). They do not present any striking peculiarities, but they are all cases in which there was little or no bleeding externally, and where the blood escaped solely into the pericardial cavity. Accordingly death was not the result of loss of blood, but of pressure of the blood on the heart. The first case was that of a man, *ætat* fifty-three, who was found dead after an adulterous visit to a married woman. There was no external injury. The pericardium was found to be distended with about 800 c. cm. (28 ounces) of partly coagulated blood. The auricles and ventricles were quite empty. The semilunar valves of the aorta were not quite competent. At the back of the *bulbus aortæ*, within the pericardium, there was a cross rupture of the wall of the *bulbus*, half an inch in length. The aortic wall was thin and in part of a yellowish color internally. It could not be shown whether the rupture was the result of psychical excitement, or whether

it was owing to a violent tussle with the woman's husband, or whether it was merely the result of accident.

The second case was that of a middle-aged man, who in the course of a quarrel received two revolver-shots in the breast. On the left side of the breast were found two bullet wounds, four inches apart, one of which passed through the cartilage of the fifth rib, close to the sternum, the other having penetrated the fourth intercostal space. The bullet was found close behind the perforated cartilage; the other (both were 7 mm. in diameter) was found with its base sticking in the anterior wall of the greatly distended pericardium, which contained about 600 c. cm. (21 ounces) of blood. There was no serious effusion of blood elsewhere in the chest. The heart was empty, and the anterior wall of the left ventricle, near to the apex, was penetrated by a wound, 5 mm. in diameter, which opened on the inside of the ventricle beneath a papillary muscle, and thus was partly closed by it. The bullet found fixed in the pericardial wall had caused the wound in the heart, but had prevented the blood escaping from the pericardial cavity. The person lived for half an hour after receiving the injury.

In the third case, a man, *æt.* 20, was stabbed in the breast with a table knife in the course of a quarrel. He walked about fifteen steps, and then fell down dead. The wound, two inches in breadth, was found to penetrate the fifth intercostal space, near to the left side of the sternum. The left pleural cavity contained about two ounces of blood. The pericardium was distended with 600 c. c. (21 ounces) of partly coagulated blood. There was a wound, fully one inch in length in its anterior wall, as it lay against the sternum. The edges of the wound were close together and very little blood had escaped. The heart was empty, and there was a wound, about an inch long, in the anterior wall of the right ventricle.

MURDER OR SUICIDE?

FREYER, of Naugard, reports a case (*Vierteljahrsschrift f. gerichtl. Med.*, 1886, N. F., Bd. xlv. S. 45-51) in which he was asked by the authorities to give an opinion. The physician who made the autopsy, stated that he believed the case to be one of suicide. The circumstances were these. A young woman, *æt.* twenty-five, was engaged to be married to a neighboring peasant's son, who does not appear to have had a high character. The engagement was distasteful to the young man's parents, because the woman was poor; but she would not allow the engagement to be broken. On the 30th of March she proceeded to a neighboring village to have a tooth extracted. On her return homewards, at six in the evening, she had to pass a wood, near which were working the young man and his father. Both these were seen about this time to leave their work and enter the wood. The young woman from this time was missing. Four days later, her dead body was discovered, one and three-quarter miles from the wood, in a deep gravel-pit filled with water. The body stood upright on the steep bank of the gravel-pit, with the top of the head one foot under the surface of the water. The body was fully clad. The head and neck were enveloped in a shawl. The hands rested on the front of the abdomen, and grasped the apron in which her shoes were wrapped. The stockings were not covered with mud or earth. One ear-ring was wanting and appeared to have been torn out. At the autopsy, which was made two days later,

it was found that rigor mortis had not entirely disappeared. *Cutis anserina* was noticeable in some parts of the body. On the neck, the inner side of the thigh, and the middle of the back, there was a brownish-red discoloration, but no subjacent effusion of blood. On the neck, beneath the larynx in front, and the second vertebra behind, a grayish-blue line one-quarter to one-half inch in breadth was observed passing round the neck, and was double in front. The skin was not hardened, nor did the subjacent tissue contain excess of blood. The heart and veins were distended with dark blood. The lungs almost filled the pleural cavities, after removal of sternum. The left of these cavities contained two ounces of a reddish fluid, the right fully three ounces. The lungs were partly adherent to the ribs, and their surface was of a marbled reddish-brown color. They were soft and crepitant. On section, a tolerably large quantity of dark blood, mixed with air-bubbles escaped. A fine brownish-red froth could be freely pressed out of the lungs. The mucous membrane of the bronchi and trachea was covered with a fine frothy reddish mucus. Trachea reddish and empty. Stomach contained twelve ounces of pure whitish fluid mixed with many air-bubbles. Uterus unimpregnated. Based on these appearances, the physician who made the autopsy certified that drowning was the cause of death, and that the case was probably one of suicide. Freyer, however, thinks otherwise. He believes the case to have been one of homicidal strangulation or hanging, the body having been afterward placed in the water. On the authority of Maschka, Hofmann, and Lesser, he denies that the presence of a little fluid in the lungs and stomach is diagnostic of death by drowning, as Lesser has shown that water can penetrate to the extent of several hundred cubic centimetres into these organs after death, if the body is placed in water. He also notes that the lungs were not "balloon-like," and had not the spongy feeling which waterlogged lungs have, and that the fluid which escaped on pressure was not watery. He attaches no importance to the *cutis anserina*. He supports his own opinion of the mode of death by reference to the erect position of the body in the water which he accounts for by the body having been placed in the water after it became rigid; also by reference to the mark on the neck, accompanied by hyperemia of the brain and lungs, and reddish frothy mucus in the trachea and bronchi, and finally to the ear-ring having been torn out. He believes that the apparent double course of the ligature in front of the neck, along with the general circumstances, point to strangulation having been practised, rather than hanging.

CASE OF ALLEGED INFANTICIDE.

Kob, of Stolp (*Viertelj. f. gerichtl. Med.*, 1886, N. F., Bd. xlv. S. 87-95), criticises a case where a young maid-servant was charged with having destroyed her newborn child. The main interest of the case attaches to the peculiar nature of the injury to the child. The cutaneous and muscular tissues of the left cheek extending from an inch behind and below the left ear to the left angle of the mouth were completely torn through and covered with coagulated blood, as was also a portion of the right cheek at the right angle of the mouth. The lower jaw was broken through at its middle, and the whole buccal cavity was quite exposed. The lower part of the tongue was almost completely torn through; there were some nail marks on the neck. The girl stated that these injuries were inflicted during an effort that she

made to separate the child from her body, by grasping the head after the head had been born. She had concealed her pregnancy, and she wished, if possible, while still retaining her situation as servant, also to conceal the birth. The lungs of the child floated in water. The umbilical cord was unbroken, and the placenta was attached to it. Kob saw no reason to doubt the girl's statement. A similar case is recorded in Maschka's *Handbuch der gerichtlichen Medicin*.

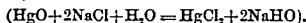
ANTISEPSIS IN RELATION TO LEGAL RESPONSIBILITY.

In all civilized countries the law holds a physician criminally responsible when, by the neglect to use reasonably proper means to cure his patient, the patient dies; and charges of alleged malpractice are not infrequent in the criminal courts. Laying aside differences of opinion on fine points, which will always exist, the medical profession is fairly well agreed as to the main lines of treatment, or of operative interference, in many forms of injury or disease, and would regard any ignorant and unjustifiable departure from these lines as constituting malpractice. The value of the antiseptic method of surgical treatment is now so universally recognized, although in its modern form it is of quite recent origin, that the administrators of the law are now forced to consider seriously whether the neglect of antiseptic precautions in the treatment of injuries is not to be regarded as criminal, if the injured person die apparently from such neglect. With the object of helping to solve this question, DR. CARL DENEKE, of Flensburg, contributes an article to the *Viertelj. f. gerichtl. Med.*, N. F., xxv. S. 96-115, in which, after considerable discussion of the subject, from many points of view, he arrives at the following conclusions: (1) It is to be regarded as a case of criminal neglect if a surgeon neglects the principles of the antiseptic method in the treatment of injuries or of operative wounds, unless the fulfilling of some vital indication renders adherence to these principles impossible. In illustration of the cases accepted, he mentions the possibility of a surgeon being engaged in brushing a diphtheritic throat, when he is suddenly called to an accident in a neighboring house, where he finds a boy fast bleeding to death from a tear, by a threshing machine, of the thigh, involving the femoral artery, from which the blood is seen to be spirting. His immediate duty is to stop the bleeding by closing the end of the artery with his forceps, although neither his hand nor the forceps has been previously washed. (2) The surgeon who treats a wound or injury according to the approved methods of antiseptic procedure is not to be held responsible in a court of law for any unfavorable course the wound may take. (3) In cases where complaints are lodged against surgeons on account of alleged want of skill in the treatment of wounds, the legal authorities ought, in the course of their preliminary investigation, to submit the case to a medical faculty for its opinion.

THE CHANGES WHICH THE DIFFERENT MERCURIAL SALTS UNDERGO IN THE ORGANISM.

FLEISCHER, of Erlangen (*Deutsche med. Wochenschrift*, xi. 36), finds, in agreement with the result obtained by Fürbringer, that calomel, when applied externally to moist surfaces, is converted into a soluble compound, whose stimulating action accounts for the healing effects of calomel when used

locally. He also observed that, if calomel is added to a solution of chloride of sodium, the filtrate is muddy from the presence of reduced metallic mercury, and gives a reaction with stannous chloride. If digested for some time and evaporated and extracted with ether, the filtrate yields crystals of what appears to be corrosive sublimate. The author has therefore no doubt as to sodic chloride acting on calomel to form corrosive sublimate, but he believes, and gives experiments in support of his belief, that the corrosive sublimate is formed, not by the taking of chlorine from the sodic chloride, but by the splitting up of the calomel into corrosive sublimate and metallic mercury. The author confirms, by experiments on cats, Schläfke's statement that calomel dusted on the conjunctiva becomes yellowish-green, and the conjunctiva inflames if iodide of potassium has previously been administered internally. He also finds that mercuric oxide, after long contact with sodic chloride, forms mercuric chloride, the fluid becoming strongly alkaline from the presence of caustic soda,



This explains the caustic action of mercuric oxide when applied locally.

COAL-GAS POISONING.

WARFVINGE (*Hygica*, xlvii. 3 *Scenska läkaresällsk. förh.* p. 9, 1885; reported in Schmidt's *Jahrbücher*, Bd. 208, S. 132) gives an account of eight cases of poisoning by coal-gas in houses where there was no gas supply. The persons lived together on a ground floor. They perceived an odor of gas in the house on retiring to bed, but nevertheless went to sleep as usual. They were all found senseless in the morning. They all recovered—five quickly, and the remaining two after a few days of hospital treatment. The ground was frozen at the time, and Warfvinge attributes the presence of gas within the house to its escaping from a broken gas-pipe in the neighborhood of the house, and to its being prevented from rising up through the soil in the usual manner by the frozen ground. Heymann, who criticised the paper after it was read, believes, on the other hand, that the escape of the gas into the house was mainly due to the difference in temperature between the outside atmosphere and that of the house. The gas was in this manner sucked into the house through the ground. He has found by experiment that frozen soil previously moistened is just as pervious to gas as is unfrozen soil.

TOXIC ACTION OF THE LOWER FATTY ACIDS.

HEINRICH MAYER has published in the *Archiv f. exper. Path. u. Pharmak.*, 1886, Bd. xxxi. S. 119-137, the results of an investigation, under the direction of Binz, of Bonn, of the action of the lower fatty acids. This forms a continuation of his work on trichloroacetic and trichlorobutyric acids, which has appeared in the same *Archiv*. He finds (1) that, in comparing the action of the sodium salts of trichloroacetic and trichlorobutyric acids with those of the non-chlorinated fatty acids, motor paralysis is a prominent and early feature in the action of the former, the sensorium being attacked later; whereas, in the case of the latter, the sensorium is more prominently affected, and motor paralysis is only feebly developed. (2) That the sodium salt of trichloroacetic acid has an energetic paralyzing effect on the nerve-centres, whereas the

sodium salt of acetic acid is not more poisonous than chloride of sodium. (3) That, on the other hand, the sodium salt of trichlorbutyric acid has a more feeble action than the sodium salt of butyric acid itself, which exercises a powerful paralyzing effect. (4) That, as regards the salts of the simple fatty acids—formate, propionate, butyrate, and valerianate of sodium—they produce, when subcutaneously injected in cats, drowsiness passing into sleep, coma, and its accompaniments. These symptoms are induced by a dose which, in the case of acetate of sodium, and lactate of sodium, has no action whatever. (5) If formic acid be excluded, which, on account of its aldehydic character, behaves somewhat singularly, all the other fatty acids have their toxic action increased with an increase in the amount of the contained carbon. In point of toxicity, formic acid lies between butyric acid and valerianic acid. These experiments were made on dogs and cats.

THE CAUSE OF THE TOXIC ACTION OF CHLORATE OF POTASSIUM.

Under this title, STOKVIS, of Amsterdam, contributes a lengthy paper to the *Archiv f. exper. Path. u. Pharmak.*, 1886, Bd. xxi. S. 169-218. The contribution is partly experimental, partly critical. The experiments are tolerably numerous, and appear to have been carefully made. The author first investigated the reduction of chlorates within the living organism as tested by estimating the amount of excreted chloride and chlorate in the urine. He then observed the action of organic and organized substances and animal fluids (including blood and urine) on chlorates outside the living body. He next investigated the formation of methæmoglobin in the blood of the living body under the action of chlorates. And, finally, he considers the cause of the toxicity of the chlorates. He obtained practically negative results, and concludes that a salt of chloric acid is not more poisonous than a salt of hydrochloric acid—*e. g.*, he found that chlorate of sodium is quite as innocuous as chloride of sodium when injected into the blood, or when administered by the mouth. He therefore ascribes the toxicity of chlorate of potassium, not to the chloric acid, but to the potash. Potassium chlorate is poisonous, therefore, for the same reason as potassium nitrate, or any other salt of potassium. His conclusion appears to be well founded. It is not, however, altogether novel.

EFFECTS OF DRASTIC POISONS ON THE INTESTINAL TRACT.

LUCIEN BUTTE (*Annal. d'hyg. publ.*, ser. 3, t. xv. pp. 347-364) has made an experimental study on dogs of the effects of colchicine, veratrine, croton oil, and colocynth on the intestinal tract. The substances were administered both by the mouth and subcutaneously, and always in sufficient dose to kill the animal. His conclusions are as follows: All the drastics employed produce inflammation and ulceration of the intestines; but they differ as to the degree of inflammation, and the seat and form of the ulcerations produced. Colchicine and veratrine both cause hyperæmia of the intestinal mucous membrane; but that caused by the colchicine is more intense and more widespread than that produced by veratrine, and there are several submucous ecchymoses, and the enteritis occupies three-fourths of the small intestine. In the case of veratrine, the enteritis hardly extends beyond the duodenum. The ulcerations resulting from colchicine are small and well defined, while those

from veratrine are larger and ill-defined, and are elevated at the centre. In the case of both, the large intestine is only slightly inflamed. Where croton oil had been used, the enteritis was very pronounced, and the submucous ecchymoses were very large and prominent; on the other hand, the ulcerations were very small and superficial. The large intestine was free from inflammation. Colocynth causes a slight congestion of the duodenum, with some small superficial ulcerations. The rest of the small intestine is not reddened. But the large intestine is violently inflamed with elevated longitudinal bands or streaks, of a dark red or blackish color.

THE STATE OF THE CORPSE AFTER POISONING BY ARSENIC.

PROF. ZAAIJER, of Leyden (*Vierteljahrsschrift für gerichtl. Medicin*, 1886, N. F., Bd. xlv. S. 249-277), records the results of the medico-legal investigation of an unusually atrocious series of cases of poisoning by an artisan's wife (Frau Van der Linden) in Leyden who, rivalling even Tofana and Brinvilliers, appears, in the course of a few years—from 1869 to 1883—to have poisoned and attempted to poison with arsenic no less than seventy individuals, of whom twenty-three or twenty-four died, including her father, her mother, and her son. The corpses of sixteen of them were exhumed and examined by Zaaïjer, with the assistance of Dr. Koning and Professor Van der Burg. From the scientific standpoint, the author's attention was mainly directed to the progress of putrefaction in the exhumed corpses, especially to their mummification. And, in order to add weight to his conclusions, he collected and compared the published accounts of sixty other cases of arsenical poisoning, in which the dead body was examined either before or after burial. He concludes—and his conclusions are not confined to arsenical bodies—that the bodies of very young children putrefy more quickly than those of adults, and especially of old people. Sex has no influence. Fat, corpulent, lymphatic bodies putrefy more readily than thin and lean bodies. Persons who have died of an acute disease putrefy more quickly than those who have died of a chronic disease. But if healthy men die suddenly they putrefy slowly. There are, however, many individual exceptions to be met with. After certain acute diseases, putrefaction advances very rapidly—e. g., after septicæmia, smallpox, typhus, etc.; on the other hand, cholera corpses putrefy slowly, evidently owing to their containing little fluid, and to the emptying of the stomach and intestines. Poisoning by carbonic oxide, sulphuretted hydrogen, narcotics, prussic acid, and morphine, hastens putrefaction, as do also the various forms of death by suffocation. Poisoning by alcohol, corrosive sublimate, arsenic, potassium cyanide, thymol, chloride of zinc, and chloride of antimony hinders the progress of putrefaction. Dropsical bodies putrefy very quickly. He discusses also the effect of the atmosphere, temperature, moisture, clothing, coffin, and the grave on the decomposition of the body. This author recalls eight cases in his experience, where, by the end of six years, the soft parts of the corpse had almost entirely disappeared. In only one of these cases was arsenic absent. As regards the occurrence of mummification, he formulates the following conclusions: (1) Mummification of dead bodies is of frequent occurrence. (2) Arsenic-free bodies, under the same conditions as arsenic-containing bodies, resist putrefaction equally well with the latter, and mummify as readily. (3) The relatively frequent mummification of the thoracic and

abdominal walls, of the skin round the joints of the hands, knees, and feet, and of the skin of the hands and fingers, is easily explained, apart from the influence of arsenic. (4) There exists no so-called arsenical mummification. (5) Mummification is from the medico-legal and toxicological standpoint of no importance.

INJURY TO THE HEAD.

JAUMES (*Annal. d'hyg. publ.*, ser. 3, t. xiv. p. 555) reports the case of a man thirty years of age, who, in the course of a quarrel, received a blow on the left side of the head from a stone. The man complained at the time of the injury, but was able to continue his usual occupation for the rest of the day, and to go to the theatre in the evening. On his return from the theatre, however, he died in a few minutes. At the autopsy it was found that there was a depressed fracture of the squamous portion of the temporal bone, with rupture of the posterior branch of the middle meningeal artery, and contusion (with hemorrhagic spots) of the subjacent portion of the brain. The injury had not been of itself sufficient to cause immediate death, but the blood, escaping from the ruptured artery had gradually accumulated and produced a fatal compression of the brain. The interesting point in the case is the light character of the symptoms which immediately followed so grave a cranial injury.

PUBLIC HEALTH.

UNDER THE CHARGE OF

SHIRLEY F. MURPHY, M.R.C.S.

MILK INFECTION.

For some years evidence has gradually been growing which tends to show that outbreaks of infectious disease amongst milk drinkers have been due to milk which did not receive its infection after leaving the cow; this is especially true where the human disease has been scarlet fever and diphtheria, and, though less frequently, enteric fever. The fact that on a number of occasions it has been found impossible to show by what means this infection has taken place, has raised a considerable presumption that the cow herself must be responsible for this condition of milk; nevertheless such examination of the cattle as has been made has failed to indicate any affection of these animals which may be regarded as a possible source of infection. Recently, however, an outbreak of scarlet fever occurred amongst persons receiving their milk supply from a farm situated in Hendon, Middlesex. This outbreak was the subject of investigation by local medical officers of health, Mr. Wynter Blyth, of Marylebone, London; and Dr. James Cameron, of Hendon, as well as by Mr. W. H. Power, Medical Inspector of the Local Government Board, England. The official report by the latter gentleman has not yet been published, but the evidence contained in the reports of the local officers shows definitely